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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/399,696	09/21/1999	KEHSING J. CHOU	ST9-99-093	2558

7590

05/31/2006

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EXAMINER

PHAM, HUNG Q

ART UNIT	PAPER NUMBER
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2168

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/399,696

Applicant(s)

CHOU ET AL.

Examiner

HUNG Q. PHAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-9, 13-15, 19-21, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9, 13-15, 19-21, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Arguments

- Applicant's arguments with respect to the rejection of claims 1, 7 and 13 under 35

U.S.C. § 101 have been fully considered but they are not persuasive.

As argued by applicants at page 7:

... the invention produces a useful and tangible result of for example, selecting an RMI server, processing a request for data and adding and deleting an RMI server.

Examiner respectfully disagrees.

The steps of *selecting a Remote Method Invocation server to process the request, connecting the additional RMI server, and deleting an existing RMI server* do not produce a tangible and useful result for the method, apparatus and program for searching for data in one or more heterogeneous data sources, after a request for data is received at a federated data source. The clause *to process the request* is an intended result as set forth in MPEP 2111.04¹.

In light of the foregoing arguments, the rejection under 35 U.S.C. § 101 is hereby sustained.

- Applicant's arguments with respect to the rejection under 35 U.S.C. § 103 have been considered but are moot in view of the new ground(s) of rejection.

¹ MPEP 2111.04:

(A) "adapted to " or "adapted for " clauses;
(B) "wherein " clauses; and
(C) "whereby " clauses.

The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case. In *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329, 74 USPQ2d 1481, 1483 (Fed. Cir. 2005), the court held that when a "whereby" clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention." *Id.* However, the court noted (quoting *Minton v. Nat'l Ass'n of Securities Dealers, Inc.*, 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003)) that a "whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step positively recited." *Id.*<

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Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3, 7-9, 13-15, 19-21, 25 and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-3, 7-9, 13-15, 19-21, 25 and 26, especially claims 1, 7 and 13, are directed to a method, apparatus and article of manufacture for searching for data in one or more heterogeneous data sources but the claimed invention as a whole does not produce a useful and tangible result as set forth in MPEP 2106 (IV)(B)(2)(b)(ii)².

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

² MPEP 2106 (IV)(B)(2)(b)(ii):

For such subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technological arts. See *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See *AT&T*, 172 F.3d at 1358, 50 USPQ2d at 1452. Likewise, a machine claim is statutory when the machine, as claimed, produces a concrete, tangible and useful result (as in *Stato Street*, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557 (**en banc*)). For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.

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Claims 1-3, 7-9, 13-15 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Choquier et al. [USP 5,774,668].

Regarding claims 1, 7 and 13, Choquier teaches a system, apparatus, and method for *searching for data in one or more heterogeneous data sources within a computer system* (Choquier, Col. 7, Line 64-Col. 8, Line 5, Col. 8, Lines 2-64 and Col. 9, Lines 54-63).

receiving a request for data at a federated data source (Choquier, Col. 8, Lines 14-27, GATEWAY 126 as *a federated data source is received a request for data*).

selecting one of a plurality of servers to process the request based on a load of the server and based on whether the server can satisfy the request for data (Choquier, FIG. 6, Col. 13, Lines 40-53 and Col. 14, Lines 44-59),

said server connected to one or more heterogeneous datastores (Choquier, Col. 9, Lines 54-59);
wherein the plurality of server form a server hierarchy (Choquier, FIG. 3, Col. 9, Lines 24-37);
upon receiving a request to add an additional server, connecting the additional server to an existing server in the server hierarchy based on a number of connections of the existing server (Choquier, Col. 7, Lines 42-51 and Col. 24, Lines 22-29);

upon receiving a request to delete an existing server in the hierarchy, deleting that server (Choquier, Col. 7, Lines 42-51 and Col. 24, Lines 15-22).

As disclosed by Choquier, Col. 12, Lines 15-26, to communicate with the servers, Microsoft Procedure Call (an optimized Remote Procedure Call) is used. As further disclosed at Col. 17, Lines 45-54, the server responds to the request by returning an object in the form of byte stream.

As well-known in the art,

Remote procedure call (RPC) is a protocol that allows a computer program running on one computer to cause a subroutine on another computer to be executed without the programmer explicitly coding the details for this interaction. When the software in question is written using

*object-oriented principles, RPC may be referred to as remote invocation or remote method invocation*³.

Thus, the APPLICATION SERVERS using RPC protocol and object-oriented principles as disclosed by Choquier is a *Remote Method Invocation* server.

Regarding claims 2, 8 and 14, Choquier teaches all the claim subject matters as discussed above with respect to claims 1, 7 and 13, Choquier further discloses the claimed *forwarding the request to the selected server* (Choquier, Col. 14, Lines 56-59).

Regarding claims 3, 9 and 15, Choquier teaches all of the claimed subject matter as discussed above with respect to claims 2, 8 and 14, Choquier further discloses the claimed *forwarding additional requests for similar data to the selected server* (Choquier, Col. 13, Lines 13-23).

Regarding claim 26, Choquier teaches all the claim subject matters as discussed above with respect to claim 1, Choquier further discloses *server hierarchy comprises a tree hierarchy* (FIG. 3, Col. 9, Lines 24-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

³ Remote Procedure Call definition
http://en.wikipedia.org/wiki/Remote_procedure_call#Web_services_RPC

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 7-9, 13-15 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. [USP 5,774,668] in view of Sun Microsystems [Java Remote Method Invocation].

Regarding claims 1, 7 and 13, Choquier teaches a system, apparatus, and method for *searching for data in one or more heterogeneous data sources within a computer system* (Choquier, Col. 7, Line 64-Col. 8, Line 5, Col. 8, Lines 2-64 and Col. 9, Lines 54-63).

receiving a request for data at a federated data source (Choquier, Col. 8, Lines 14-27, GATEWAY 126 as *a federated data source is received a request for data*).

selecting one of a plurality of servers to process the request based on a load of the server and based on whether the server can satisfy the request for data (Choquier, FIG. 6, Col. 13, Lines 40-53 and Col. 14, Lines 44-59),

said server connected to one or more heterogeneous datastores (Choquier, Col. 9, Lines 54-59);

wherein the plurality of server form a server hierarchy (Choquier, FIG. 3, Col. 9, Lines 24-37);

upon receiving a request to add an additional server, connecting the additional server to an existing server in the server hierarchy based on a number of connections of the existing server (Choquier, Col. 7, Lines 42-51 and Col. 24, Lines 22-29);

upon receiving a request to delete an existing server in the hierarchy, deleting that server (Choquier, Col. 7, Lines 42-51 and Col. 24, Lines 15-22).

The missing of Choquier is the implementation of *Remote Method Invocation* on the server.

As disclosed by Choquier, Col. 12, Lines 15-26, to communicate with the servers, Microsoft Procedure Call (an optimized Remote Procedure Call) is used.

RMI method for a remote procedure call to process a task on a remote server computer using stubs and skeleton is disclosed by Sun Microsystems.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to apply Remote Method Invocation into a Remote Procedure Call System in order to have a well translation of objects of a distributed system.

Regarding claims 2, 8 and 14, Choquier and Sun Microsystems, in combination, teach all of the claimed subject matter as discussed above with respect to claims 1, 7 and 13, Choquier further discloses the claimed *forwarding the request to the selected server* (Choquier, Col. 14, Lines 56-59).

Regarding claims 3, 9 and 15, Choquier and Sun Microsystems, in combination, teach all of the claimed subject matter as discussed above with respect to claims 2, 8 and 14, Choquier further discloses the claimed *forwarding additional requests for similar data to the selected server* (Col. 9, Lines 26-45).

Regarding claim 26, Choquier and Sun Microsystems, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Choquier further discloses *server hierarchy comprises a tree hierarchy* (FIG. 3, Col. 9, Lines 24-37).

Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. [USP 5,774,668] as applied to claims 1, 7, 13, and further in view of Francis et al. [USP 6,772,131 B1].

Regarding claims 19-21, Choquier teaches all the claim subject matters as discussed above with respect to claims 1, 7 and 13, but does not explicitly teach the claimed *load of the RMI server is based on at least the ratio of a current load of the RMI server and a maximum load of the RMI server*. However, Francis discloses a load balancing based on *the ratio of a current load of the server and a maximum load of the server* (Francis, Col. 6, Lines 4-11). It would have been obvious for one of ordinary skill in the art at the time the invention was made to use the ratio of current load and maximum load to define the load condition of a server in order to distribute the request to an available server.

Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. [USP 5,774,668] and Sun Microsystems [Java Remote Method Invocation] as applied to claims 1, 7, 13, and further in view of Francis et al. [USP 6,772,131 B1].

Regarding claims 19-21, Choquier and Sun Microsystems, in combination, teach all of the claimed subject matter as discussed above with respect to claims 1, 7 and 13, but does not explicitly teach the claimed *load of the RMI server is based on at least the ratio of a current load of the RMI server and a maximum load of the RMI server*. However, Francis discloses a load balancing based on *the ratio of a current load of the server and a maximum load of the server* (Francis, Col. 6, Lines 4-11). It would have been obvious for one of ordinary skill in the art at the time the invention was made

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to use the ratio of current load and maximum load to define the load condition of a server in order to distribute the request to an available server.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. [USP 5,774,668] as applied to claim 1, and further in view of Sheth et al. [Federated Database System for Managing Distributed, Heterogeneous, and Autonomous Databases].

Regarding claim 25, Choquier teaches all of the claimed subject matter as discussed above with respect to claim 1, but fails to teach the claimed *a virtual datastore which combines a plurality of heterogeneous datastores into a consistent and unified conceptual view*.

Sheth teaches *a virtual datastore which combines a plurality of heterogeneous datastores into a consistent and unified conceptual view* (Pages 222-224, 4.4 Schema Integration, Federated Schema).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to integrate schemas into a single schema in order to allocate and control sharing data in heterogeneous databases.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choquier et al. [USP 5,774,668] and Sun Microsystems [Java Remote Method Invocation] as applied to claim 1, and further in view of Sheth et al. [Federated Database System for Managing Distributed, Heterogeneous, and Autonomous Databases].

Regarding claim 25, Choquier and Sun Microsystems, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, but fails to teach the claimed

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a virtual datastore which combines a plurality of heterogeneous datastores into a consistent and unified conceptual view.

Sheth teaches *a virtual datastore which combines a plurality of heterogeneous datastores into a consistent and unified conceptual view* (Pages 222-224, 4.4 Schema Integration, Federated Schema).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to integrate schemas into a single schema in order to allocate and control sharing data in heterogeneous databases.


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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIM T. VO can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


HUNG Q PHAM
Examiner
Art Unit 2168

May 23, 2006


TIM VO
PRIMARY EXAMINER